Message

From: McCord, Kylie/ATL [Kylie.McCord@CH2M.com]
Sent: 9/28/2017 3:50:31 PM
To: Cetin, Kenan [Kenan.Cetin@wv.gov]
CC: Weissbart, Erich [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e361d2f1f04641e49ca63c81a2e2f4ee-EWeissba]; Cibrik, Jerome (JE) [cibrikje@dow.com]; Johnson, Jeffrey/CIN [Jeffrey.Johnson@CH2M.com]; Weber, Paul/IDA [Paul.Weber@CH2M.com]
Subject: RE: UCC Institute - Pore Water Confirmation Sampling Approach

Kenan,

Thanks for talking with me this morning. Based on our conversation, your plan is to travel to the Charleston next week to witness the sampling as I have outlined in item 1. The CMA crew and our field team leader will go through the operation of the Trident probe and instrumentation on the dock and then you will observe (from the cabin) completion of a sample. As we discussed and you agreed, it is not feasible to do more than that due to the cramped quarters of the sampling boat. They will be working at the SCF facility next week. Please let us know once you have confirmed the day but you believe it will likely be Wednesday. Let us know if there is anything else we can do. Thanks,

Kylie

From: McCord, Kylie/ATL
Sent: Wednesday, September 27, 2017 2:58 PM
To: 'Cetin, Kenan'
Cc: Erich Weissbart (weissbart.erich@epa.gov) ; Cibrik, Jerome (JE) ; Johnson, Jeffrey/CIN ; Weber, Paul/IDA
Subject: RE: UCC Institute - Pore Water Confirmation Sampling Approach [EXTERNAL]

Kenan,

Attached please find a photo of the vessel that is used to conduct the pore water sampling by Coastal Monitoring. The tool used to drive the sampler down and collect the pore water samples is located on the bow of the boat and computers/probes where the water analysis is completed is located inside the shed. During sampling, there are two CMA employees stationed on the bow of the boat with the sampler and one inside the cabin with our sampler/oversight person. There is very little movement on the boat once sampling is underway (i.e., the two CMA employees remain on the bow of the boat during transportation and throughout sampling). This vessel is often used in shallow waters for getting into difficult locations to collect pore water which is why it is set up the way it is. We have discussed the insurance and Health and Safety situation with Coastal Monitoring and have come up with the following options for demonstrating the pore water sampling approach to you for Institute and SCF:

1. CMA and CH2M staff can demonstrate all the components of the sampler, probes, computers, etc. while the boat is docked at the marina including showing you how the probe is positioned and driven to the appropriate depth. We can take you out to sample a location (it has been taking about an hour per location) and have you sit in the cab with the CMA operator and our sampler (Lisa) to show you how we differentiate if we are getting pore water and river water including all of the data that is collected. Insurance only covers 4 on the boat but CMA is able to allow us to add a 5th person for a limited amount of time – they will not allow us to do this all afternoon due to the tight quarters and potential H&S issues all afternoon. We believe this is the best approach to hopefully bring you up to speed and answer questions you have about the operation of Trident Probe pore water sampler.

2. Dow has a Pontoon boat that we can potentially secure and take you out to the sampling location while sampling is occurring. This would allow you to observe the driving of the sampler from the exterior but would not allow you to observe the actual sampling that occurs. There are several near shore locations at Institute (not sure about SCF) but it may be that you see as much from standing on shore and observing the exterior operations.

I apologize for this being a problem – unfortunately the boat is simply not outfitted appropriately for observers. Please let me know if you are still interested in coming down to observe the sampling with the limitations that we unfortunately have. Jerome and I honestly were not aware of the challenges with the size of the boat.

Thanks,

Kylie

From: Cetin, Kenan [mailto:Kenan.Cetin@wv.gov]
Sent: Tuesday, September 26, 2017 2:25 PM
To: McCord, Kylie/ATL <Kylie.McCord@CH2M.com>
Cc: Erich Weissbart (weissbart.erich@epa.gov) <weissbart.erich@epa.gov>; Cibrik, Jerome (JE) <cibrikje@dow.com>; Johnson, Jeffrey/CIN <Jeffrey.Johnson@CH2M.com>; Weber, Paul/IDA <Paul.Weber@CH2M.com>
Subject: RE: UCC Institute - Pore Water Confirmation Sampling Approach [EXTERNAL]

Kylie,
I plan to be at the Institute site by 11am to Noon. I will spend the entire afternoon with you observing and learning what your pore water specialist do out there in the boat.
I am sorry that I could not let you know earlier as I had not been able to secure a state vehicle for travel tomorrow. But now that I have a vehicle, I will travel early to get there on time. Let me know if this will work out.

My cell for easy quick communication is available:
304-389-2103
Thanks
Kenan

From: McCord, Kylie/ATL [mailto:Kylie.McCord@CH2M.com]
Sent: Monday, September 25, 2017 12:41 PM
To: Cetin, Kenan <Kenan.Cetin@wv.gov>
Cc: Erich Weissbart (weissbart.erich@epa.gov) <weissbart.erich@epa.gov>; Cibrik, Jerome (JE) <cibrikje@dow.com>; Johnson, Jeffrey/CIN <Jeffrey.Johnson@CH2M.com>; Weber, Paul/IDA <Paul.Weber@CH2M.com>
Subject: RE: UCC Institute - Pore Water Confirmation Sampling Approach

Kenan,

Yes – the pore water sampling at Institute will occur this week. We are mobilizing today and getting ready and expect the sampling at Institute to occur on Tuesday and Wednesday (26th and 27th). The SCF sampling will occur beginning on Thursday and continuing through next week (28th-30th, and October 2nd – 6th). Let us know if/when you plan to come out.

Thanks,

Kylie

From: Cetin, Kenan [mailto:Kenan.Cetin@wv.gov]
Sent: Monday, September 25, 2017 12:18 PM
To: McCord, Kylie/ATL <Kylie.McCord@CH2M.com>
Cc: Erich Weissbart (weissbart.erich@epa.gov) <weissbart.erich@epa.gov>
Subject: RE: UCC Institute - Pore Water Confirmation Sampling Approach [EXTERNAL]

Is P.W. sampling happening at Institute this week? Can I get a schedule, even if tentative? I will see if I can be present. Please let me know.
Thank you.
Kenan

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From: McCord, Kylie/ATL [mailto:Kylie.McCord@CH2M.com]
Sent: Wednesday, September 06, 2017 12:47 PM
To: Cetin, Kenan <Kenan.Cetin@wv.gov>; Weissbart, Erich <Weissbart.Erich@epa.gov>
Cc: Cibrik, Jerome (JE) <cibrikje@dow.com>; Johnson, Jeffrey/CIN <Jeffrey.Johnson@CH2M.com>; Dyke, Gary/DET <Gary.Dyke@CH2M.com>; McDougal, Jason S <Jason.S.McDougal@wv.gov>
Subject: RE: UCC Institute - Pore Water Confirmation Sampling Approach

Erich and Kenan,

We would like to set up a call to discuss the pore water sampling work that is planned at Institute and South Charleston to answer the questions that you have both posed with regard to the procedure, data collection, and analyses. We are scheduled to be in the field starting the week of September 25 to complete the work so we would like to have this call as soon as reasonable. Please let me know your availability over the next couple of days – e.g. through next Tuesday – if possible so that we can try to set up a call (probably an hour) to make sure that concerns are alleviated.

Thanks,

Kylie

From: Cetin, Kenan [mailto:Kenan.Cetin@wv.gov]
Sent: Friday, September 01, 2017 7:35 PM
To: McCord, Kylie/ATL <Kylie.McCord@CH2M.com>; Weissbart, Erich <Weissbart.Erich@epa.gov>
Cc: Cibrik, Jerome (JE) <cibrikje@dow.com>; Johnson, Jeffrey/CIN <Jeffrey.Johnson@CH2M.com>; Dyke, Gary/DET <Gary.Dyke@CH2M.com>; McDougal, Jason S <Jason.S.McDougal@wv.gov>
Subject: RE: UCC Institute - Pore Water Confirmation Sampling Approach [EXTERNAL]

Jerome/Kylie,
The more I looked and reviewed through the pore water presentation of last week that you sent to us past Monday, the more questions seem to pop up in my mind that I feel justified to ask or bring up as comments and questions.

1) In the cross-sections, C-C' and D-D' I note that there are 4 pore water locations shown on sand and gravelly sand, with only one in sandy clay.

   A) How is the lithology at pore water sampling location determined? Is it simply a horizontal lateral projection of a lithology passed/crossed in a well toward the river until it reaches it? Or is a grab or core sample taken at the sampling location at the same time?

B) In the general application of the pore water sampling in the environmental remediation work, does the sampling for pore water involve obtaining a core or grab sediment/rock sample in the very vicinity of the pore water sample location?
C) Even if the answer to the question in B is negative, I see significant utility in knowing the exact lithology at the point of sampling; preferably in the form of a core. Would you not agree?

2) In cross-section, D-D, using the horizontal scale, one can calculate that sampling locations, INS-0315 and INS-306 are only about 70 feet and 90 feet, respectively, from the groundwater sample location INS-78B with 120,00 microgram/L of benzene nearly entirely in sand. Toward D in the cross-section, there is clearly highly contaminated GW probably with greater than 50,000 micrograms of benzene. With only sand, in between this location (INS-78B) and the pore water sampling locations down gradient, how do you explain and reconcile 1U for benzene? Straight shot laminar GW flow to nothingness!

3) I lived right by Kanawha river for 4 years in a row. The river traffic, especially coal barge traffic, is constant and relatively heavy when a barge is full and when barges meet or come side by side. Also, the river's water volume, flow energy and speed is rather significant from time to time, especially in the fall for a few months when the Summerville Dam is drawn down. In other words, it is a river where actual scour/erosion as well as settlement/deposition of sediments take place, just like in totally natural, unconfined, wild rivers. As a side note, I must add that I suspect that in some areas of Kanawha rive this sand size fill on the river bottom surface might be coal that ends up in the in the river water from various historical transportation modes and activities on or around the river. No matter what the sand material is, the question I have is this: Presuming that the sand lithology over which the porewater sampling has been confirmed (as is shown in the cross-sections), what kind of a reconciliation, if any, has been done to ensure that the sand is not simply some recent loose sand fill deposited on the river bottom surface that is completely saturated with river water at worst, or at least significantly diluted by it. In other words, is the sand native or in situ, more simple way to ask the longer question?

4) I do not know that there is enough difference between GW and river water geochemistry near the interface at river bottom in boundary waters, that you can tell dilution in pore water samples. What has been done to show that there is no dilution, or at least no significant dilution? Or could there have been any efforts that would help us in this way make the "no dilution" argument?
5) It seems to me that if the sampling location does not have enough clay/organic sediment material to kind of trap the pore water from coming into direct contact with river water so it is truly "resident" pore groundwater and not diluted by river water, then there is a risk at best of dilution and, at worse, straight river water being sucked into the sample chamber during the sampling, the risk being dependent on exact sampling conditions such as depth into the sediment, the volume of water collected, the size of the flange, successful operation of the apparatus, etc. etc. Why choose sand or sandy locations as opposed to locations with a clay rich layer present? Or am I missing part of the picture? Please elaborate.

6) Could you please provide an SOP or a QUAPP that contains details that would perhaps illuminate some of my concerns above?

7) In an extremely strictly and demonstrably controlled environment, a result of 1U might be relatively easy to believe. However, in 15-20 feet of water in the relatively murky waters of a river and in the absence of independent line of evidence (such as what Erich had requested or some others perhaps out there) the

argument for a MNA will have a significant credibility problem. Not just here at Institute but also at South Charleston facility and elsewhere. Please let us know if you can think of ways to change the pore water sampling program/protocol in ways that would ease and alleviate some of my concerns above.

Just too busy with admin stuff and not enough time to spend om more review of technical stuff.
So, I apologize for not being able to articulate and getting this e-mail to you earlier.

Kenan

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From: McCord, Kylie/ATL [mailto:Kylie.McCord@CH2M.com]
Sent: Monday, August 28, 2017 9:09 AM
To: Weissbart, Erich <Weissbart.Erich@epa.gov>; Cetin, Kenan <Kenan.Cetin@wv.gov>
Cc: Cibrik, Jerome (JE) <cibrikje@dow.com>; Johnson, Jeffrey/CIN <Jeffrey.Johnson@CH2M.com>; Dyke, Gary/DET <Gary.Dyke@CH2M.com>
Subject: UCC Institute - Pore Water Confirmation Sampling Approach

Erich and Kenan,

Attached please find the Union Carbide Corporation (UCC) Institute facility Pore Water Confirmation Sampling Approach presentation presented to the U.S. EPA (EPA) and West Virginia DEP (WVDEP) via teleconference call on August 24, 2017. A summary of the proposed sampling rationale is provided below.

In 2012 a pore water investigation was conducted in the Kanawha River adjacent to the High Purity Hydrocarbons (HPH) and Tank 1010 areas at the facility. The primary objective of this investigation was to determine if volatile organic compounds (VOCs), primarily benzene, in groundwater were discharging to the Kanawha River above respective pore water screening levels. The investigation consisted of collecting pore water samples from 16 locations adjacent to the Tank 1010 area and 8 locations adjacent to the HPH area. Locations were targeted adjacent to areas with highest onshore groundwater VOC concentrations and in locations where venting groundwater would be expected to occur within the Kanawha River.

The purpose of the proposed pore water confirmation sampling event is confirm previous pore water VOC concentrations within Tank 1010 area remain below respective pore water screening levels and to confirm prior pore water results from the HPH area. Samples are proposed to be collected at 12 of the 24 original pore water sample locations.

The 12 locations were selected based on the following:

- *Locations were targeted where VOCs were previously detected and include the one location where toluene was encountered just above the pore water screening level*
- *Locations were targeted in areas adjacent to highest on shore groundwater VOC concentrations and in areas where the highest concentrations of VOCs in pore water would be expected (based on the hydrogeological conceptual model)*

CH2M will provide EPA and WVDEP with a notification of the sampling date in advance – ***the work is tentatively scheduled to occur the week of September 18*** *but we have to confirm with the subcontractor. In addition, following*

completion of the pore water confirmation sampling and subsequent data validation; the results of the sampling will be conveyed to EPA and WVDEP via teleconference call and will be included in a brief technical memo to document the work.

If you have any questions or would like to discuss further, please feel free to contact me at 678-530-4231 or Jerome Cibrik at 304-747-7788. Thanks,

Kylie

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